addition to a glossary, index, and bibliography, names and addresses of supplementary resources such as government agencies and support groups are provided.

A minor criticism is the overlap of material that occurs among chapters, but, given the book's intended audience, the repetition of information about the basic nature of strokes by different authors will probably aid in the general reader's understanding of this unfamiliar area. Overall, this volume is an excellent reference which offers specific, practical information for recovering stroke patients and their families.

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SOCIAL AND FUNCTIONAL APPROACHES TO LANGUAGE AND THOUGHT. Edited by Maya Hickmann. Orlando, FL, Academic Press, 1987. 328 pp. $35.00.

Debate concerning the relationship between language and thought is hardly new. Writers from the fields of anthropology, linguistics, neurology, philosophy, and psychology have vigorously participated in this controversy. Important contributors to this debate include: Chomsky, Piaget, Vygotsky, Whorf, and Wittgenstein, to name a few. At the center of the debate is the relative autonomy or interdependence that exists between language and thought. This book, edited by Maya Hickmann with contributions from 13 other authors, takes a new look at the old debate.

The volume is divided into three sections, with a total of fifteen chapters. The first chapter orients the reader to the "social and functional approach" taken by the authors. Briefly stated, this approach holds that cognitive development and language acquisition occur in a social milieu that must be accounted for when studying the relationship of thought and language. The authors, most of whom are linguists, attempt to raise relevant questions about linguistic and cognitive development across the fields of psychology, linguistics, anthropology, and philosophy and to promote greater interchange between these disciplines.

The first section of the book presents a useful discussion of the major theories concerned with the relationship of language and thought; especially useful are the chapters that discuss the work of Vygotsky and Whorf. One potential drawback of this section is that its first chapter, by Michael Silverstein, could be difficult to read for those without a background in linguistics.

Section II, also primarily theoretical in nature, takes up the possible implications of the functional approach to language. It is generally accepted that the study of language consists of phonetics, semantics, syntactics, and pragmatics. Very briefly stated, phonetics deals with sound production, which is quite separate from the meaning applied to sound—the domain of semantics. Syntactics concerns the structure of language, and pragmatics considers the use of language in social contexts. Recently, there has been mounting interest in pragmatics, with many linguists claiming that it has been largely overlooked. The authors of this volume clearly embrace this latter view. They contend further that the successful use of language in social contexts is not merely an indicator of language development; rather, the functional demands of the environment play an essential role in language acquisition. Again, some readers may encounter difficulty in reading parts of this section. For example, chapter 7, which deals with the forms of reference in language (the devices used by speaker and listener

to identify persons, places, or things in discourse), is interesting—but will probably require determination for non-linguists.

The third and final section considers the role of language in cognitive development. Continuing from the work of Vygotsky and Whorf, these authors attempt to show that the functional demands of language not only influence linguistic development but influence cognitive development as well. In this view, cognition does not follow a set of logico-mathematical steps of increasing complexity in which language emerges when cognitive structures allow it to do so. Rather, cognition and language develop along different lines that cross early in childhood. Social demands prompt language development. Then, as linguistic competence proceeds, the structure of language becomes a scaffold for thinking. Four of the five chapters in this final section of the book present examples of how the functional theory can be studied. The study techniques presented are primarily observational—such as mother-child interaction during assigned puzzle construction, a child's narrative skill in a given story-telling task, or social interactions in naturalistic settings.

In summary, this volume is a collection of mostly theoretical essays concerning the mutual influence of thought and language. Since this matter is fraught with controversy, the authors have taken care to present other sides of the debate—specifically, Piaget's view. A strong point of the book is its careful tracing of the origin and evolution of the functional approach to language development. This historical discussion argues persuasively for the inclusion of pragmatics in language acquisition. Still, some readers may find the book one-sided or feel that the implications of social function on linguistic and cognitive development are overstated. Also, some chapters may prove to be arduous reading for a general audience in psychiatry and psychology. This possibility is unfortunate, since one of the aims of the volume was to promote interdisciplinary discussion of these issues. Those criticisms aside, this book provides a valuable and contemporary discussion concerning the interaction of cognition and language in human development.

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MATHEMATICAL ASPECTS OF HODGKIN-HUXLEY NEURAL THEORY. By Jane Cronin. New York, Cambridge University Press, 1987. 261 pp. $49.50.

This book examines the seminal Hodgkin-Huxley equations (HH equations) from a rigorous mathematical perspective. The effort is an important one both for applied mathematics and for neuroscience.

The first part of the book is devoted to the evolution of the four-dimensional system of nonlinear ordinary differential equations. The author begins by framing the physiological problem and subsequently summarizing the important experiments that contributed to the derivation of the HH equations. She describes the current status of the equations and proceeds with a discussion of other mathematical models of nerve conduction, including the mathematically amenable FitzHugh-Nagumo (FN) equa-